

Claims

1. Use of a polyurethane in the manufacturing of a composition or kit used for filling or short-circuiting vascular cavities, where the said polyurethane used can be dissolvedis soluble in a solvent or a solvent mixture mingling with body fluids and the polyurethane is the main component responsible for binding into the vascular cavities.

2. The use according to claim 1, where a composition is manufactured, which contains the polyurethane dissolved in a solvent or a solvent mixture mingling with body fluids, optionally combined with usual auxiliaries.

3. The use according to claim 1, where a kit is manufactured, which contains the following components:

a) a polyurethane which can be dissolvedis soluble in a solvent or a solvent mixture mingling with body fluids, optionally together with other usual auxiliaries,

b) one or more solvents or solvent mixtures mingling with body fluids, in which the said polyurethane can be dissolvedis soluble, optionally together with other usual auxiliaries,

c) optionally other usual auxiliaries.,

where the components given above are formulated separately or some of them are formulated in a common subunit.

4. The use according to any of claims 1 to 3, where the solvent is DMSO or EtOH or their mixture, preferably the mixture of them in the a volume ratio of 1:10 - 10:1, more preferably of 1:3 - 3:1.

5. The use according to any of claims 1 to 4, where the main diol component of the polyurethane is characterized by the general formula of $\text{HO-R}^1\text{-OH}$, where R^1 stands for a $\text{C}_1\text{-C}_8$ alkylene group, preferably 1,4-buthanediol.

6. The use according to claim 5, where 50 to 95 % of the main diol component is in polyether form, preferably in polytetrahydrofurane form.

7. The use according to claims 1 to 6, where the main diisocyanate component of the polyurethane is one or more compound(s) selected from the following ones:group consisting of 2,4- or 2,6- toluylene-diisocyanate (TDI), 1,6-hexane-diisocyanate and diphenyl-methane-4,4'-diisocyanate (MDI), of which diphenyl-methane-4,4'-diisocyanate is preferred.

8. The use according to claim any of claims 1 to 7, where the composition or kit contains a polyurethane solution, usable for filling aneurisms, having a viscosity higher than 150 mPa.s, preferably higher than 250 mPa.s at 23 °C.

9. The use according to any of claims 1 to 7, where the composition or kit contains a polyurethane solution, usable for filling angiomas and vascularized tumors, having a viscosity is lower than 1 000 mPa.s, preferably lower than 250 mPa.s at 23 °C.

10. The use according to any of claims 1 to 9, where the molecular mass of the polyurethane used is 4 000 to 70, 000 Dalton, preferably 20, 000 to 35, 000 Dalton.

11. The use according to any of claims 1 to 10, where the composition or kit contains contrast material as an auxiliary, preferably selected from the following group: a substance containing tantalum, iodine, barium, tungsten and/or bismuth, of which micronized tantalum powder, tantalum-oxide, barium-sulphate and tungsten are more preferred.

12. Composition for filling or short-circuiting vascular cavities, containing a polyurethane which can be dissolvedis soluble in a solvent or a solvent mixture mingling with body fluids and which is the main component responsible for binding into the vascular cavities,

optionally dissolved in a solvent or a solvent mixture mingling with body fluids, and optionally combined with usual auxiliaries.

13. A composition according to claim 12, which contains the polyurethane dissolved in a solvent or a solvent mixture mingling with body fluids, optionally combined with usual auxiliaries.

14. A therapeutic product containing the components formulated separately (kits of parts), which can be used for filling or short-circuiting vascular cavities and contains the following components:

a) a polyurethane that can be solvedwhich is soluble in a solvent or a solvent mixture mingling with body fluids and which is the main component responsible for binding into the vascular cavities, optionally together with other usual auxiliaries,

b) one or more solvents or solvent mixtures mingling with body fluids, in which the said polyurethane can be dissolvedis soluble, optionally together with other usual auxiliaries,

c) optionally other usual auxiliaries.,

where the components given above are formulated separately or some of them are formulated in a common subunit.

15. A composition or a therapeutic product according to any of claims 12 to 14, where the solvent is DMSO or EtOH or their mixture, preferably a mixture of them in the volume ratio of 1:10 - 10:1, more preferably of 1:3 - 3:1.

16. A composition or a therapeutic product according to any of claims 12 to 15, where the main diol component of the polyurethane is characterized by the general formula of $\text{HO-R}^1\text{-OH}$, where R^1 stands for a $\text{C}_1\text{-C}_8$ alkylene group, preferably 1,4-buthanediol.

17. A composition or a therapeutic product according to claim 16, where 50 to 95 % of the main diol component is in polyether form, preferably in polytetrahydrofurane form.

18. A composition or a therapeutic product according to any of claims 12 to 17, where the main diisocyanate component of the polyurethane is one or more compound(s) selected from the following ones: group consisting of 2,4- or 2,6- toluylene-diisocyanate (TDI), 1,6-hexane-diisocyanate and diphenyl-methane-4,4'-diisocyanate (MDI), of which diphenyl-methane-4,4'-diisocyanate is preferred.

19. A composition or a therapeutic product according to any of claims 12 to 18, where the composition or therapeutic product contains a polyurethane solution, usable for filling aneurisms, having a viscosity higher than 150 mPa.s, preferably 250 mPa.s at 23 °C.

20. A composition or a therapeutic product according to any of claims 12 to 18, where the composition or therapeutic product contains a polyurethane solution, usable for filling angiomas and vascularized tumors, having a viscosity lower than 1 000 mPa.s, preferably lower than 250 mPa.s at 23 °C.

21. A composition or a therapeutic product according to any of claims 12 to 20, where the molecular mass of the polyurethane used is 4 000 to 70, 000 Dalton, preferably 20, 000 to 35, 000 Dalton.

22. A composition or a therapeutic product according to any of claims 12 to 21, where the composition or therapeutic product contains a contrast material as an auxiliary, preferably selected from the following group: a substance containing tantalum, iodine, barium, tungsten or bismuth, of which micronized tantalum powder, tantalum-oxide, barium-sulphate and tungsten are more preferred.

23. Use of a polyurethane for filling vascular cavities, where the applied polyurethane is dissolved in a solvent or solvent mixture mingling with body fluids, and optionally combined with usual auxiliaries.

24. The use according to claim 23, where the solvent is either DMSO or EtOH or their mixture, preferably a mixture of them in the volume ratio of 1:10 - 10:1, more preferably of 1:3 - 3:1.

25. The use according to any of claims 23 and or 24, where the main diol component of the polyurethane is a diol characterized by the general formula of $\text{HO-R}^1\text{-OH}$, where R^1 stands for a $\text{C}_1\text{-C}_8$ alkanediyl group, preferably 1,4-buthanediol.

26. The use according to claim 25, where 50 to 95 % of the main diol component is in polyether form, preferably in polytetrahydrofurane form.

27. The use according to any of claims 23 to 26, where the main diisocyanate component of the polyurethane is one or more compound(s) selected from the following ones: group consisting of 2,4- or 2,6-toluylene-diisocyanate (TDI), 1,6-hexane-diisocyanate and diphenyl-methane-4,4'-diisocyanate (MDI), of which diphenyl-methane-4,4'-diisocyanate is preferred.

28. The use according to any of claims 23 to 27, where a polyurethane solution applicable for filling aneurisms is used having a viscosity higher than 150 mPa.s, preferably 250 mPa.s at 23 °C.

29. The use according to any of claims 23 to 27, where a polyurethane solution applicable for filling angiomas and vascularized tumors is used having a viscosity lower than 1 000 mPa.s, preferably lower than 250 mPa.s at 23 °C.

30. The use according to any of claims 23 to 29, where molecular mass of the polyurethane used is 4 000 - 70, 000 Dalton, preferably 20, 000 - 35, 000 Dalton.

31. The use according to any of claims 23- to 30, where the contrast material is used as an auxiliary, preferably selected from the following group: a substance containing tantalum, iodine, barium, tungsten or bismuth, of which micronized tantalum powder, tantalum-oxide, barium-sulphate and tungsten are more preferred.